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(54) **Title:** DOORWAY CLOTHES DRYER HANGER

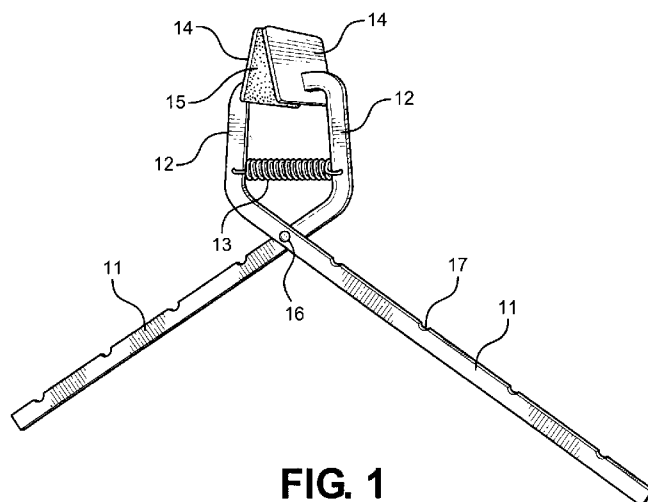


FIG. 1

(57) **Abstract:** An article support device adapted to clamp against opposing sides of a door frame, comprising a first and second member pivotably connected about a common joint, an upper clamping portion drawn together via a tension spring, and a lower support portion adapted to support and align a plurality of hanging articles thereon in a spaced fashion. Each member comprises an elongated lower support portion and arcuate upper portion terminating at a clamping support pad. Tension in the spring between the two member upper portions draws each clamping pad together against opposing surfaces of a door frame, supporting hanging articles through bearing pressure and friction. The lower portion of the members includes a plurality of spaced notches for supporting hangers and other articles thereon to facilitate air drying.



DOORWAY CLOTHES DRYER HANGER

TECHNICAL FIELD OF THE INVENTION

The present invention relates to support articles of the clamping and hanging kind. More specifically, the present invention relates to a support device having a
5 door frame clamp for supporting a plurality of spaced articles thereon to facilitate air drying and separated suspension thereof.

BACKGROUND OF THE INVENTION

Hanging and separated support of clothing items has always been an effective method of drying laundered or otherwise moistened garments. Traditionally,
10 an outdoor clothes line is strung from one support location to another, while articles of clothing are pinned to the line and allowed to air dry through natural air movement. Advances in household appliances allowed users to insert washed or wet articles of clothing directly into a tumble dryer, which directs an air flow over the wet garments placed within the dryer's rotating drum. As the drum rotates, the clothes are
15 separated from one another and the moisture is able to evaporate, while the circulation of heated or room temperature air increases evaporation by convection and the removal of moisture from the environment.

While dryer devices have been proven to be effective household appliances, their design and use has several inherent drawbacks. These include the potential for
20 damage to the clothes inserted into the dryer, the energy consumption related to the continual and recurring use thereof, the physical space required to fit such an appliance in smaller domiciles, and finally the inability of the dryer to accommodate

drying of very delicate articles of clothing. The first of these drawbacks is a direct result of the unmonitored tumbling of large quantities of clothing while being exposed to intense heat and physical movement. Overexposure of the clothes to the heat, untreated clothing and unmonitored tumbling can lead to clothing shrinkage, distortion and even damage. The second drawback relates to the environmental impact and cost of dryer devices, which commonly consume large quantities of energy during their drying cycles, resulting in increased energy consumption and cost for the user. Finally, many dryers are not capable of accommodating more delicate clothing articles without risking permanent damage thereto, necessitating air drying or other suitable methods.

Alternate means of drying clothing articles are becoming increasingly popular, as the physical size, energy consumption and the cost of replacing damaged clothing is unacceptable for many users. These methods commonly include loosely hanging laundered garments from a clotheshorse or from individual hangers. In contrast to simply laying out laundered articles on a surface or on furniture, the use of hangers and clotheshorses greatly improves the ability of the garments to dry, as the clothing is suspended and separated from itself and neighboring garments, increasing its exposed surface area and preventing pockets of moisture. Common locations for supporting hangers include interior door frames and bathtub slider or curtain rails, which provide an exposed ledge or support.

The present invention relates to a device adapted to improve a user's ability to suspend clothing articles from an interior door frame. The use of hangers directly onto an interior door frame can quickly lead to overcrowding and a shortage of

available space on the door frame ledge, as the number of hangers and their spacing is limited by the width of the frame. The present invention relates to a door frame attachable article support device that increases usable support area by altering the hanger direction. The present invention provides a hanging article support clamp having elongated support members adapted to support hanging items through the doorway rather than across its width, while providing sufficient clamping pressure on opposing sides of a door frame to adequately support the attached articles of clothing. The hanging articles are spaced along the support members and aligned through the doorway, rather than along its width, improving the spacing and overall hanging capacity of the space over traditional methods.

DESCRIPTION OF THE PRIOR ART

Devices have been disclosed in the prior art that relate to article support devices, and specifically to clothing hanger devices attachable to household structures. These include those devices that have been patented or published in patent application publications. Generally, these include structures that do not provide the design simplicity and effectiveness of the present invention or the ability to clamp against opposing sides of a door frame. The present invention provides two connected members that form a clamping portion and an elongated support portion for supporting spaced clothing articles through a doorway for increased air drying and efficient use of interior space. The devices in the prior art relate to those that require exposed support members for securement or devices that offer more complex structures for support of the device and attached garments.

Specifically, U.S. Published Patent Application Publication No. 2007/0062897 to Lawrence discloses an article suspension apparatus for firmly affixing a hanger apparatus to an overhead surface, whereby a clamp having a first and second member are operatively coupled together and a biasing means is connected to the members for clamping the members together. Below the clamp is a hanger body that is adapted to support a plurality of articles along its members. While the Lawrence device provides an overhead support that is clampable to a bulkhead or door frame; however the elements of the hanger body and its incorporation into the clamping mechanism differ from the present invention. The present invention provides a very simple clamping mechanism having support arm extensions that provide locations for clothes hangers and other articles to hang from while the clamping end of the members is engaged and compressing a door frame therebetween.

Further, U.S. Patent No. 4,123,024 to Levy is a device that describes a clothes drying support device of the suspended type that is specifically designed for drip drying wet clothing over a shower stall, wherein the support elements are adapted to fit over a shower door beam of varying width. The device comprises an adjustable clamp for fitting over a shower stall door beam, wherein the claim is a cantilevered plate suspended over the door beam and having a plurality of slots to accept adjustable drip dry support apparatuses. The support apparatuses provide a location upon which to place wet clothes and hang therefrom. The Levy device requires access to an exposed beam or door member, wherein the weight of the suspended laundry places load on the plate and onto the upper surface of the beam. The Levy device is not operable with a standard door frame, wherein through access

is not generally available. The present invention bears against opposing sides of the door frame or clamps around an exposed shower stall door beam for support, providing a more modular configuration that can support hanging articles in a variety of locations.

5 The present invention provides a clampable structure that is adapted to secure a door frame between its two clamping pads, or further secure around an exposed beam wherein the clamping pads form around the perimeter of the support. The hanger support region of each member provides an elongated and delimited region upon which a plurality of clothing hangers may be supported therealong. The structure and construction of the present invention substantially diverges in design
10 elements from the prior art, and consequently it is clear that there is a need in the art for an improvement to existing doorway clothing support devices. In this regard the instant invention substantially fulfills these needs.

SUMMARY OF THE INVENTION

15 In view of the foregoing disadvantages inherent in the known types of doorway clothing support devices now present in the prior art, the present invention provides a new support device wherein the same can be utilized for providing convenience for the user when supporting a plurality of spaced hanging garments and other articles through an open interior doorway.

20 It is therefore an object of the present invention to provide a new and improved doorway clothing support device that has all of the advantages of the prior art and none of the disadvantages.

It is another object of the present invention to provide a doorway clothing support device having two pivotable members, wherein the members form an arcuate clamping region and an elongated support region.

Another object of the present invention is to provide a doorway clothing support device that allows the device to clamp against opposing sides of an open interior door frame.

Another object of the present invention is to provide a doorway clothing support device that allows the device to clamp around an exposed support bar, such as a shower door or curtain rail.

Yet another object of the present invention is to provide a doorway clothing support device that includes an elongated support region that is adapted to support a plurality of clothing garments on hangers in an organized and spaced manner.

A final object of the present invention is to provide a doorway clothing support device that supports hanging clothing through an interior doorway rather than across its width, improving capacity and clothing separation.

Other objects, features and advantages of the present invention will become apparent from the following detailed description taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTIONS OF THE DRAWINGS

Although the characteristic features of this invention will be particularly pointed out in the claims, the invention itself and manner in which it may be made

and used may be better understood after a review of the following description, taken in connection with the accompanying drawings wherein like numeral annotations are provided throughout.

FIG. 1 shows a perspective frontal view of the present invention.

5 FIG. 2 shows a perspective view of the present invention wherein the clamping portion of the device is in an open position.

FIG. 3 shows a perspective view of the present invention clamping a door frame structure.

FIG. 4 shows a perspective view of the present invention in a working state,
10 clamping a door frame structure and supporting a plurality of clothing articles.

DETAILED DESCRIPTION OF THE INVENTION

Reference is made herein to the attached drawings. Like reference numerals are used throughout the drawings to depict like or similar elements of the doorway clothing support device. For the purposes of presenting a brief and clear description
15 of the present invention, the preferred embodiment will be discussed as used for supporting hanging garments through a doorway in a spaced configuration. The figures are intended for representative purposes only and should not be considered to be limiting in any respect.

Referring now to FIG. 1, there is shown a perspective frontal view of the
20 doorway clothing support device of the present invention in a clamped position. The device comprises a first and second member rotatably attached about a common

pivot point 16 that separates each member into sections comprising a clamping arm section 12 and an article support section 11. The portion of each member below the pivot point is the article support section 11, which comprises an elongated member having delimited hanger notches 17 therealong. The notches 17 are adapted to

5 statically support the upper portion of a clothing hanger, wherein the notches 17 are positioned along the support section 11 such that the garments are sufficiently spaced along the section length and in sufficient quantity to hang several items on each member. Above the pivot point 16, each member forms an arcuate clamping arm section 12 that provides space for a tension spring 13 connected between each

10 section 12. The clamping arm sections terminate at a clamping pad 14 that is adapted to bear against opposing sides of an interior door frame. This section 12 of the device members directs the pads inward such that they will align flush against a door frame surface while the spring 13 draws the sections 12 together for sufficient clamping pressure.

15 Each pivotable member is formed of a continuous structure and connected at the pivot point 16 by a pin that allows free rotation. The spring 13 is adapted to bias the clamping sections together. The spring 13 is expandable by separation of each clamping arm section 12, which is easily achieved by the user handling the support section 11 of each member and using the length thereof as a means of gaining

20 leverage or mechanical advantage over the spring tension. Referring now to FIG. 2, there is shown a perspective view of the present invention in a separated state, wherein the clamping pads 14 of each member are separated a sufficient distance between which to fit a door frame thickness. The contact surface 15 of each pad 15

may be formed of a high friction or compressible material to prevent sliding of the device once installed or to prevent damage to the wall above the door frame.

The operation of the device is adapted to allow a user to easily expand the clamping arm sections 12 of each member and secure the assembly to the

5 horizontal upper portion of a door frame above the head casing and against the open surface of the wall thereabove. The user exerts upward pressure on the ends of each member support section 11 to expand the clamping pads 14, which expands the tension spring 13 and allows the pads to be placed on opposing sides of the door frame. Once positioned, the pressure on the support sections 11 can be released

10 and the pads 14 are pressed against the door frame via the tension in the spring 13, which draws the clamping arm sections 12 together for the pads 14 to bear against the door frame support surfaces and support the load on the assembly imparted by the weight of the hanging garments.

Referring to FIGs. 3 and 4, there are shown two perspective views of the

15 doorway clothing support device of the present invention in an attached and working state. In this working state, the clamping pads 14 bear against the upper portion of an interior door frame 18. Tension in the spring 13 develops bearing forces between the clamping pads 14 and the wall surface 18 to sufficiently and statically support the assembly and the weight of attached clothing articles 20 along both support sections

20 11. As shown, each support section 11 provides a plurality of spaced notches within which clothing hangers 19 are secured. The hangers are prevented from sliding along the support sections 11 and further prevented from clumping together, which would reduce the ability of damp clothing to air dry. The length and number of

notches is dependent upon the capacity of the specific device and the designed weight limit for which the assembly is adapted to support. It is contemplated that several different size variations may be built and sold for accommodating larger or smaller wash loads, and thus larger or smaller support lengths and foreseeable

5 clothing weight. At the end of each support section 11, it is further contemplated that an upstanding notch may be desired to further prevent any articles from sliding off of the end of each member while drying. When positioned through the doorway, the support sections 11 are downwardly angled, thus hanger support notches are necessary to prevent the clothing articles from bunching or sliding.

10 The present invention is adapted to support a plurality of clothing articles in a spaced and efficient manner to allow for air drying. The device is formed of two connected and pivotable members that form clamping arm and support sections, wherein the support sections accommodate a plurality of hanging garments along its length and through the entryway of a doorway. This eliminates the need to support
15 hangers along the width of the door frame, increasing the capacity and number of clothing articles that a single interior doorway may support for air drying purposes. It is contemplated that delicate clothing articles may be directly hung from the device, as well as articles that are suspended via clothing hangers. The overall goal is to increase air drying efficiency of clothing for those individuals without a dryer device
20 or for those with articles of clothing that are more adapted to be air dried than machine dried. The consumed space of the assembly in a working state is reduced, and the overall efficiency with which the clothing is dried is also increased due to the controlled spacing of each garment. Overall energy consumption is further reduced

by eliminating the need to machine dry, and the user is provided an alternative to bulky clotheshorses or laying out clothing on household furniture for drying purposes.

In light of the present disclosure and the relevant prior art, it is therefore submitted that the instant invention is sufficiently distinct and has been shown and
5 described in what is considered to be the most practical and preferred embodiments. It is recognized, however, that departures may be made within the scope of the invention and that obvious modifications will occur to a person skilled in the art. With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size,
10 materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

Therefore, the foregoing is considered as illustrative only of the principles of
15 the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

I claim:

1) A doorway article support device, comprising:

a first and second member rotatably connected about a common pivot joint;

said pivot joint dividing each member into a lower support section and an upper

clamping arm section,

said pivot joint forming a vertical centerline about which said sections are mirrored

complimentary pairs;

said support section comprising an outwardly extending and elongated length having

a plurality of spaced hanger notches along its upper surface;

said clamping arm section comprising an arcuate length terminating at a clamping

pad and supporting a tension spring between said mirrored clamping arm

sections;

said tension spring adapted to draw said clamping pad of each clamping arm section

together.

2) The device of claim 1, wherein said clamping pads are adapted to bear

against opposing sides of a door frame upper surface.

3) The device of claim 1, wherein said clamping pads are adapted to clamp

around an exposed beam or rail member.

4) The device of claim 1, wherein said clamping pads further comprise a bearing

contact surface comprised of a high friction material.

- 5) The device of claim 1, wherein said clamping pads further comprise a bearing contact surface comprised of a compressible material to prevent wall surface damage.
- 6) The device of claim 1, wherein said support sections further comprise a distal end, said distal end forming an upstanding notch to prevent articles from sliding off of said section distal end.

1/3

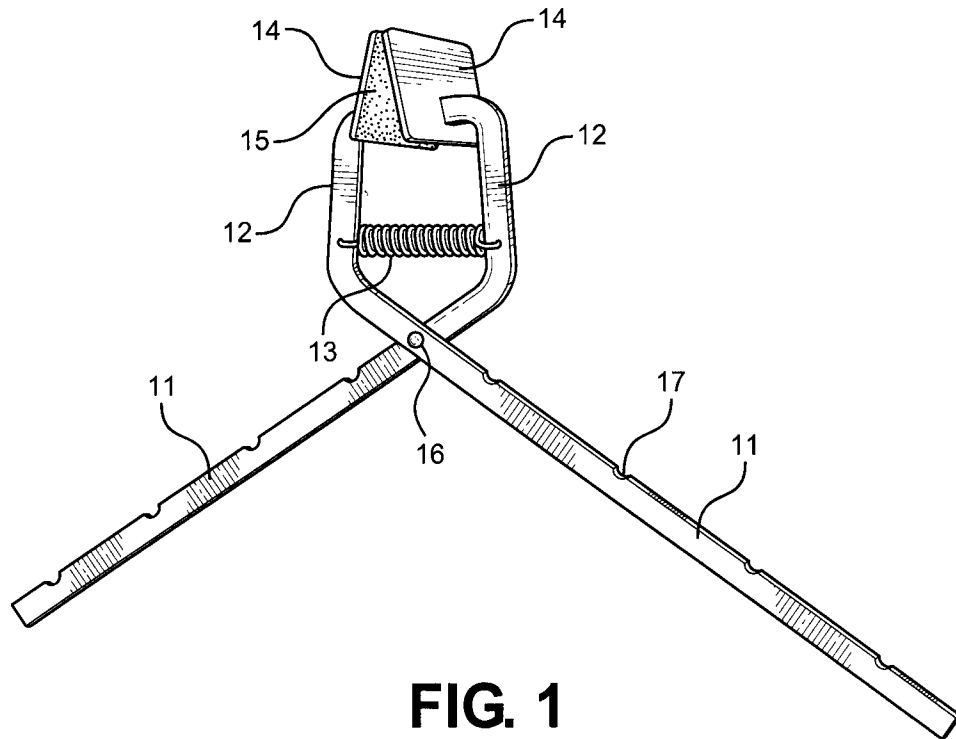


FIG. 1

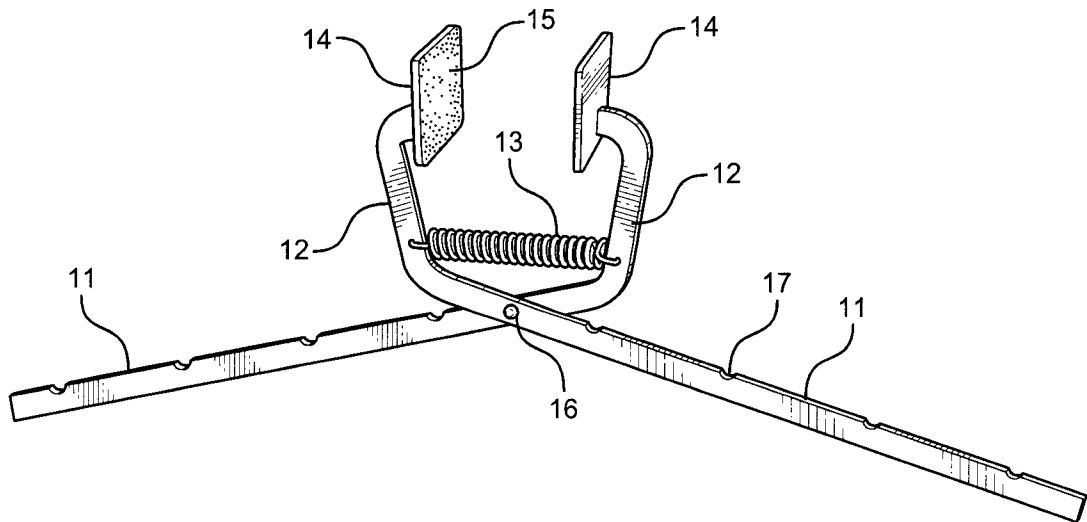


FIG. 2

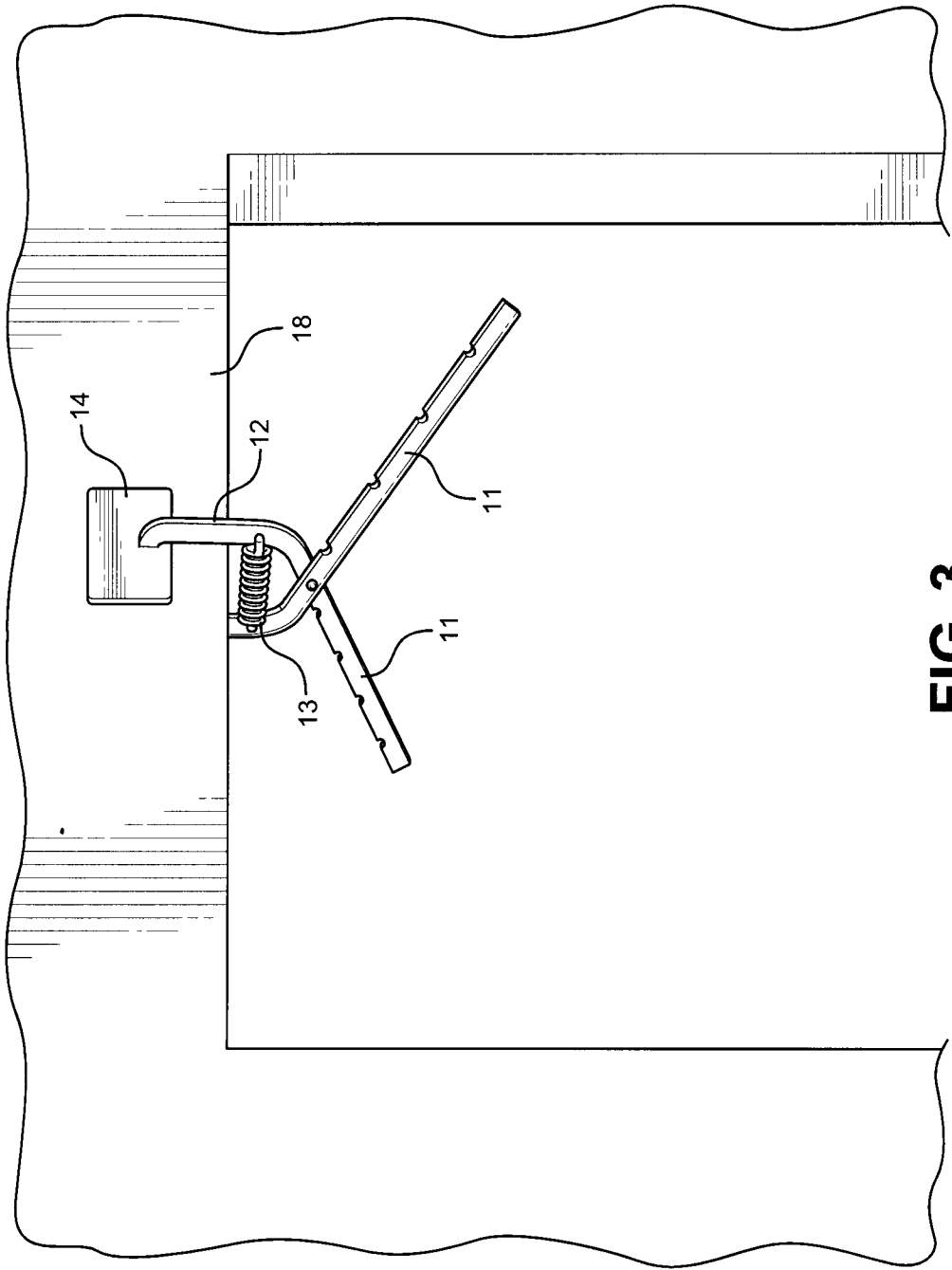


FIG. 3

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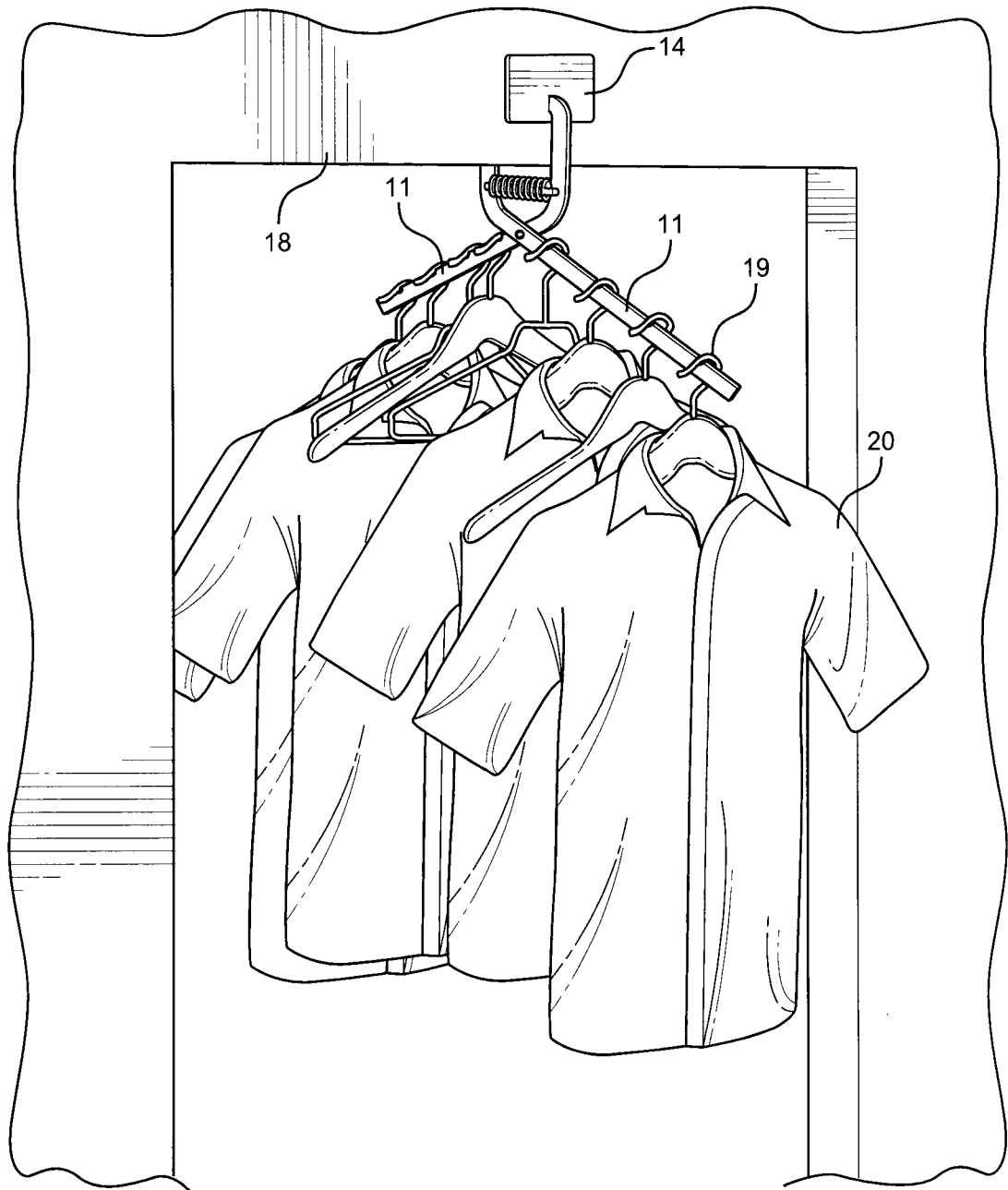


FIG. 4

INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER
IPC: **D06F 57/12** (2006.01) , **A47G 25/08** (2006.01)
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC: D06F 57/12, A47G 25/08
USPC: 223/85, 223/90, 223/91, 223/94; 211/87.01, 211/85.3, 211/104

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)
EPODOC: classification, with keywords: clamp, spring, door/window, jamb/lintel, scissor, pivot, frame
Canadian Patent database: classification

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2000-24390 A (HIROYUKI, S.) 25 January 2000 (25-01-2000) -English abstract; figures 1-5	1-6
Y	JP 8-66294 (KATSUJI, O.) 12 March 1996 (12-03-1996) -English abstract; figures 1-6	1-6
A	EP 0845556 A2 (OHSUGI, Y. et al) 03 June 1998 (03-06-1998) -figures 1-4; abstract; columns 5-11	1-6
A	US 2007/0062897 A1 (LAWRENCE, M.) 22 March 2007 (22-03-2007) -whole document	1-6

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CA2012/000484

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
JP200024390	25 January 2000 (25-01-2000)	None	
JP8-66294	12 March 1996 (12-03-1996)	None	
EP0845556A2	03 June 1998 (03-06-1998)	AU4441297A CA2222447A1 CN1183494A EP0845556A3 ID19033A JP10156093A JP3653683B2 KR100267007B1	04 June 1998 (04-06-1998) 27 May 1998 (27-05-1998) 03 June 1998 (03-06-1998) 24 February 1999 (24-02-1999) 04 June 1998 (04-06-1998) 16 June 1998 (16-06-1998) 02 June 2005 (02-06-2005) 15 September 2000 (15-09-2000)
US2007062897A1	22 March 2007 (22-03-2007)	None	